

National Fire Academy

FESHE Model Curriculum

Associate's (Core)

February 2008



FEMA



Building Construction for Fire Protection

Course Description: This course provides the components of building construction that relate to fire and life safety. The focus of this course is on firefighter safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies.

Prerequisite: Completion of *Principles of Emergency Services* or instructor approval.

- Outcomes:**
1. Demonstrate an understanding of building construction as it relates to firefighter safety, buildings codes, fire prevention, code inspection and firefighting strategy and tactics.
 2. Classify major types of building construction.
 3. Analyze the hazards and tactical considerations associated with the various types of building construction.
 4. Explain the different loads and stresses that are placed on a building and their interrelationships.
 5. Identify the principle structural components of buildings and demonstrate an understanding of the functions of each.
 6. Differentiate between fire resistance and flame spread, and describe the testing procedures used to establish ratings for each.
 7. Classify occupancy designations of the building code.
 8. Identify the indicators of potential structural failure as they relate to firefighter safety.
 9. Identify and analyze the causes involved in the line of duty firefighter deaths related to structural and wildland firefighting, training and research and the reduction of emergency risks and accidents.

Available Texts: *Brannigan Building Construction for the Fire Service*; Francis Brannigan, Francis L. Brannigan, Glenn P. Corbett, NFPA, 4th Ed., 2007
Building Construction and Firefighting; Ralph K. DeLaOssa, Tokiao Publishing, 2007
Building Construction for the Fire Service; Fire Protection Publications
Building Construction Methods and Materials for the Fire Service; Michael Smith, Pearson Education, 2008
Collapse of Burning Buildings; Vincent Dunn, Pennwell, 1988

**Supporting
References/Research
for Faculty and
Students:**

U.S. Fire Administration

Building Construction, Combustible & Non-Combustible, U. S. Fire Administration

Publications: <http://www.usfa.fema.gov/applications/publications>

See Arson, Fire Data, Fire Protection, Fire Service Operations, Hazardous Materials, Health and Safety, Wildfire

Applied Research:

<http://www.usfa.fema.gov>

Research Reports:

<http://www.usfa.fema.gov>

Technical Reports:

<http://www.usfa.fema.gov/applications/publications>

Lessons Learned Information Sharing:

<http://www.llis.dhs.gov/member/secure/index.cfm>

Topical Fire Research Series:

<http://www.usfa.fema.gov/research>

Learning Resource Center:

<http://www.lrc.fema.gov>

National Institute for Standards and Technology

<http://www.fire.nist.gov>: See Publications, FIREDOC (under Publications)

Lessons Learned Information Sharing:

<http://www.llis.dhs.gov/member/secure/index.cfm>

<http://www.usfa.fema.gov/applications/publications/techreps.cfm>

References

Building Construction for the Fire Service; Francis Brannigan, NFPA, 1992

Building Construction Related to the Fire Service; Fire Protection Publications

Collapse of Burning Buildings; Vincent Dunn, Pennwell, 1988

Strategic and Tactical Considerations on the Fire Ground (and Instructor's Guide); James Smith, Brady-Prentice Hall

Strategic and Tactical Considerations on the Fire Ground Study Guide; James Smith, Trafford Press

Society of Fire Protection Engineers:

<http://www.pentoncmg.com/sfpe/index.html>

Current Events/News

<http://www.firehouse.com>

<http://www.fireengineering.com>

<http://www.withthecommand.com>

Assessment:

Students will be evaluated for mastery of learning objectives by methods of evaluation to be determined by the instructor.

Points of Contact:

Ralph DeLaOssa, Long Beach City College, Long Beach, California
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Course Outline

Building Construction for Fire Protection

- I. Introduction
 - A. History of Building Construction
 - B. Governmental Functions, Building and Fire Codes
 - C. Fire Risks and Fire Protection
 - D. Fire Loss Management and Life Safety
 - E. Pre-fire Planning and Fire Suppression Strategies
- II. Principles of Construction
 - A. Terminology and Definitions
 - B. Building and Occupancy Classifications
 - C. Characteristics of Building Materials
 - D. Types and Characteristics of Fire Loads
 - E. Effects of Energy Conservation
- III. Building Construction
 - A. Structural Members
 - 1. Definitions, Descriptions and Carrying Capacities
 - 2. Effects of Loads
 - B. Structural Design and Construction Methods
 - C. System Failures
- IV. Principles of Fire Resistance
 - A. Standards of Construction
 - B. Fire Intensity and Duration
 - C. Theory vs. Reality
- V. Fire Behavior vs. Building Construction
 - A. Flame Spread
 - B. Smoke and Fire Containment
 - 1. Construction and Suppression Systems
 - 2. HVAC Systems
 - 3. Rack Storage

Combustible

VI. Wood Construction

- A. Definition and Elements of Construction
- B. Types of Construction
- C. Fire Stopping and Fire Retardants
- D. Modifications/Code Compliance

VII. Ordinary Construction

- A. Definitions and Elements of Construction
- B. Structural Stability and Fire Barriers
- C. Modifications/Code Compliance

VIII. Collapse

VIII. Ventilation

Non-Combustible

IX. Steel Construction

- A. Definitions and Elements of Construction
- B. Structural Stability, Fire Resistance and Fire Protection of Elements
- C. Modifications/Code Compliance

X. Concrete Construction

- A. Definitions and Elements of Construction
- B. Structural Stability and Fire Resistance
- C. Modifications/Code Compliance

XI. High Rise Construction

- A. Early vs. Modern Construction
- B. Vertical and Horizontal Extension of Fire and Smoke
- C. Fire Protection and Suppression
- D. Elevators
- E. Atriums/Lobbies
- F. Modifications/Code Compliance

XII. Collapse

XIV. Ventilation

Fire Behavior and Combustion

Course Description: This course explores the theories and fundamentals of how and why fires start, spread, and how they are controlled.

Prerequisite: None.

- Outcomes:**
1. Identify physical properties of the three states of matter.
 2. Categorize the components of fire.
 3. Recall the physical and chemical properties of fire.
 4. Describe and apply the process of burning.
 5. Define and use basic terms and concepts associated with the chemistry and dynamics of fire.
 6. Describe the dynamics of fire.
 7. Discuss various materials and their relationship to fires as fuel.
 8. Demonstrate knowledge of the characteristics of water as a fire suppression agent.
 9. Articulate other suppression agents and strategies.
 10. Compare other methods and techniques of fire extinguishments.

Available Text: *NFPA Handbook* (CD-ROM licensing agreement available)

**Supporting
References/Research
for Faculty and
Students:**

U.S. Fire Administration

Publications:

http://www.usfa.fema.gov/applications/publications/pubs_main.cfm

See Arson, Fire Protection, Wildfire

Applied Research:

<http://www.usfa.fema.gov/dhtml/inside-usfa/research.cfm>

Research Reports:

http://www.usfa.fema.gov/dhtml/inside-usfa/r_reports.cfm

Technical Reports:

<http://www.usfa.fema.gov/applications/publications/techreps.cfm>

Topical Fire Research Series:

<http://www.usfa.fema.gov/dhtml/inside-usfa/tfrs.cfm>

Learning Resource Center:

<http://www.usfa.fema.gov/dhtml/inside-usfa/lrc.cfm>

**Supporting
References/Research
for Faculty and
Students:**

National Institute for Standards and Technology

<http://www.fire.nist.gov>: See Fire Tests/Data, Software/Models, Publications, FIREDOC (under Publications)

References

Principles of Fire Protection Chemistry and Physics; Raymond Friedman, NFPA, 3rd Ed., 1998

Principles of Fire Behavior; James Quintiere, Thomson, 1st Ed., 1997

Principles of Fire Behavior; James G. Quintiere, Delmar, 1998

<http://www.interfire.org/>

Society of Fire Protection Engineers:

<http://www.pentoncmg.com/sfpe/index.html>

Current Events/News

<http://www.firehouse.com/>

<http://www.fireengineering.com/>

<http://www.withthecommand.com/>

Assessment:

Students will be evaluated for mastery of learning objectives by methods of evaluation to be determined by the instructor.

Points of Contact:

Terry Koeper, Crafton Hills College, California
(909) 389-3261, tkoeper@craftonhills.edu

Course Outline

Fire Behavior and Combustion

I. Introduction

- A. Matter and Energy
- B. The Atom and its Parts
- C. Chemical Symbols
- D. Molecules
- E. Energy and Work
- F. Forms of Energy
- G. Transformation of Energy
- H. Laws of Energy

II. Units of Measurements

- A. International (SI) Systems of Measurement
- B. English Units of Measurement

III. Chemical Reactions

- A. Physical States of Matter
- B. Compounds and Mixtures
- C. Solutions and Solvents
- D. Process of Reactions

IV. Fire and the Physical World

- A. Characteristics of Fire
- B. Characteristics of Solids
- C. Characteristics of Liquids
- D. Characteristics of Gases

V. Heat and its Effects

- A. Production and Measurement of Heat
- B. Different Kinds of Heat

VI. Properties of Solids Materials

- A. Common Combustible Solids
- B. Plastic and Polymers
- C. Combustible Metals
- D. Combustible Dust

VII. Common Flammable Liquids and Gases

- A. General Properties of Gases
- B. The Gas Laws
- C. Classification of Gases
- D. Compressed Gases

VIII. Fire Behavior

- A. Stages of Fire
- B. Fire Phenomena
 - 1. Flashover
 - 2. Backdraft
 - 3. Rollover
 - 4. Flameover
- C. Fire Plumes

IX. Fire Extinguishment

- A. The Combustion Process
- B. The Character of Flame
- C. Fire Extinguishment

X. Extinguishing Agents

- A. Water
- B. Foams and Wetting Agents
- C. Inert Gas Extinguishing Agents
- D. Halogenated Extinguishing Agents
- E. Dry Chemical Extinguishing Agents
- F. Dry Powder Extinguishing Agents

XI. Hazards by Classification Types

- A. Hazards of Explosives
- B. Hazards of Compressed and Liquefied Gases
- C. Hazards of Flammable and Combustible Liquids
- D. Hazards of Flammable Solids
- E. Hazards of Oxidizing Agents
- F. Hazards of Poisons
- G. Hazards of Radioactive Substances
- H. Hazards of Corrosives

Fire Prevention

Course Description: This course provides fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use of fire codes, identification and correction of fire hazards, and the relationships of fire prevention with built-in fire protection systems, fire investigation, and fire and life-safety education.

Prerequisite: None.

- Outcomes:**
1. Define the national fire problem and main issues relating thereto.
 2. Recognize the need, responsibilities, and importance of fire prevention as part of an overall mix of fire protection.
 3. Recognize the need, responsibilities, and importance of fire prevention organizations.
 4. Review minimum professional qualifications at the state and national level for Fire Inspector, Fire Investigator, and Public Educator.
 5. Define the elements of a plan review program.
 6. Identify the laws, rules, codes, and other regulations relevant to fire protection of the authority having jurisdiction.
 7. Discuss training programs for fire prevention.
 8. Design media programs.
 9. Discuss the major programs for public education.

Available Texts: *Fire Prevention: Code Enforcement & Inspection*; David Diamantes, Thomson, 2002
Fundamentals of Fire Protection; Arthur E. Cote, NFPA, 2004
Introduction to Fire Prevention; James Robertson, Fire Engineering, 2004
Introduction to Fire Prevention; Brady, 2005
Life Safety Code 101 Handbook; NFPA
NFPA Fire Protection Handbook (NFPA CD-ROM licensing agreement available)
Principles of Fire Protection; David Diamantes, 2004

**Supporting
References/Research
for Faculty and
Students:**

U.S. Fire Administration

Publications:

http://www.usfa.fema.gov/applications/publications/pubs_main.cfm

See Arson, Fire Data, Fire Protection, Fire Safety and Public
Education, Fire Service Administration, Training, Wildfire

Applied Research:

<http://www.usfa.fema.gov/dhtml/inside-usfa/research.cfm>

Research Reports:

http://www.usfa.fema.gov/dhtml/inside-usfa/r_reports.cfm

Technical Reports:

<http://www.usfa.fema.gov/applications/publications/techreps.cfm>

Topical Fire Research Series:

<http://www.usfa.fema.gov/dhtml/inside-usfa/tfrs.cfm>

Learning Resource Center:

<http://www.usfa.fema.gov/dhtml/inside-usfa/lrc.cfm>

National Institute for Standards and Technology

<http://www.fire.nist.gov>: Fire Tests/Data, Publications

References

Fire Inspection and Code Enforcement; Fire Protection
Publications, 1998

Fire and Life Safety Inspection Manual Eighth Edition; Robert E.
Solomon, NFPA, 2002

Fire & Life Safety Educator; Fire Protection Publications, 1997

Fire Prevention Applications; Brett Lacey, Paul Valentine, Fire
Protection Publications, 2005

<http://www.homefiresprinkler.org/>

Society of Fire Protection Engineers:

<http://www.pentoncmg.com/sfpe/index.html>

Current Events/News

<http://www.firehouse.com/>

<http://www.fireengineering.com/>

<http://www.withthecommand.com/>

Assessment:

Students will be evaluated for mastery of learning objectives by
methods of evaluation to be determined by the instructor.

Point(s) of Contact:

Judith Kuleta, Bellevue Community College, Washington (425)
564-2515,
jkuleta@bcc.ctc.edu

Course Outline

Fire Prevention

I. History and Development of Fire Prevention

Fire Prevention Organizations

- A. Public
- B. Federal
- C. State
- D. Private

II. Organization of a Fire Prevention Bureau

- A. Functions
- B. Fire Prevention Duties and Responsibilities
- C. Fire Prevention Tools of the Trade

III. Building Codes and Fire Prevention

- A. Model Building Codes
- B. Other Codes

IV. Fire Codes and Fire Prevention

V. Structural Elements

VI. Inspection Procedures

VII. Identification of Hazards

- A. Common vs. Special Hazards
- B. Hazard Types
- C. Non-structural Hazards
- D. Deficiencies in Fire Protection Equipment and Systems

VIII. Abatement and Mitigation of Hazards

IX. Fire Investigation

X. Public Fire Safety Education

XI. Plan Review

XII. Report Preparation and Record Keeping

Fire Protection Hydraulics and Water Supply

Course Description: This course provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems.

Prerequisite: Demonstration of a competency in high school level algebra or the equivalent.

- Outcomes:**
1. Apply the application of mathematics and physics to the movement of water in fire suppression activities.
 2. Comprehend the design principles of fire service pumping apparatus.
 3. Analyze community fire flow demand criteria.
 4. Demonstrate, through problem solving, a thorough understanding of the principles of forces that affect water at rest and in motion.

Available Texts: *Fire Protection Hydraulics and Water Supply Analysis*; Pat Brock, Fire Protection Publications, 2005
Fire Protection Handbook; NFPA
Fire Service Hydraulics and Water Supply; Mike Wieder, IFSTA/Fire Protection Publications, 2004
Introduction to Fire Pumps; Thomas Sturtevant, Thomson, 2004

**Supporting
References/Research
for Faculty and
Students:**

U.S. Fire Administration

Publications:

http://www.usfa.fema.gov/applications/publications/pubs_main.cfm

See Fire Protection, Fire Administration, Fire Service Operations, Wildfire

Applied Research:

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Technical Reports:

<http://www.usfa.fema.gov/applications/publications/techreps.cfm>

Topical Fire Research Series:

<http://www.usfa.fema.gov/dhtml/inside-usfa/tfrs.cfm>

Learning Resource Center:

<http://www.usfa.fema.gov/dhtml/inside-usfa/lrc.cfm>

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National Institute for Standards and Technology

<http://www.fire.nist.gov>: Fire Tests/Data, Software/Models,
Publications, FIREDOC (under Publications)

References

Fire Service Hydraulics; James Casey, Pennwell, 2nd.Ed. 1984

Fire Service Pump Operators Handbook; Warren Isman, Pennwell
1984

Hydraulics for Firefighting; William Crapo, Thomson, 2001

Pumping Apparatus: Driver/Operator Handbook; Fire Protection
Publications, 1998

Techniques of Fire Hydraulics; Lawrence Erven, Glencoe Fire
Service Series, 1972

Current Events/News

<http://www.firehouse.com/>

<http://www.fireengineering.com/>

<http://www.withthecommand.com/>

Assessment:

Students will be evaluated for mastery of learning objectives by
methods of evaluation to be determined by the instructor.

Points of Contact:

Terry Koeper, Crafton Hills College, California
(909) 389-3261, tkoeper@craftonhills.edu

Course Outline

Fire Protection Hydraulics and Water Supply

- I. Water as an extinguishing agent
 - A. Physical properties
 - B. Terms and definitions
- II. Math review
 - A. Fractions
 - B. Ratios, proportions, and percentage
 - C. Powers and roots
- III. Water at rest
 - A. Basic principles of hydrostatics
 - 1. Pressure and force
 - 2. Six principles of fluid pressure
 - 3. Pressure as a function of height and density
 - 4. Atmospheric pressure
 - B. Measuring devices for static pressure
- IV. Water in motion
 - A. Basic principles of hydrokinetics
 - B. Measuring devices for measuring flow
 - C. Relationship of discharge velocity, orifice size, and flow
- V. Water distribution systems
 - A. Water sources
 - B. Public water distribution systems
 - C. Private water distribution systems
 - D. Friction loss in piping systems
 - E. Fire hydrants and flow testing
- VI. Fire Pumps
 - A. Pump theory
 - B. Pump classifications
 - C. Priming systems
 - D. Pump capacity
 - E. Pump gauges and control devices
 - F. Testing fire pumps

VII. Fire streams

- A. Calculating fire flow requirements
- B. Effective horizontal and vertical reach
- C. Appliances for nozzles
- D. Performance of smooth-bore and combination nozzles
- E. Hand-held lines
- F. Master streams
- G. Nozzle pressures and reaction
- H. Water hammer and cavitations

VIII. Friction loss

- A. Factors affecting friction loss
- B. Maximum efficient flow in fire hose
- C. Calculating friction loss in fire hose
- D. Friction loss in appliances
- E. Reducing friction loss

IX. Engine pressures

Factors affecting engine pressure

X. Standpipe and sprinkler systems

- A. Standpipe systems
 - 1. Classifications
 - 2. Components
 - 3. Supplying Standpipe Systems
- B. Sprinkler systems
 - 1. Classifications
 - 2. Components
 - 3. Supplying sprinkler systems

Fire Protection Systems

Course Description: This course provides information relating to the features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection and portable fire extinguishers.

Prerequisite: High School algebra and FESHE core courses or equivalent

- Outcomes:**
1. Explain the benefits of fire protection systems in various types of structures.
 2. Describe the basic elements of a public water supply system including sources, distribution networks, piping and hydrants.
 3. Explain why water is a widely used extinguishing agent and describe how water extinguishes fires.
 4. Identify the different types and components of sprinkler, standpipe and foam systems.
 5. Define the benefits of residential sprinkler legislation.
 6. Identify five different types of non-water based fire suppression systems and describe how these systems extinguish fire.
 7. Describe the basic components of a fire alarm system.
 8. Identify three different types of detectors and explain how they detect fire.
 9. Describe the hazards of smoke and list the four factors that can influence smoke movement in a building.
 10. Recognize the appropriate application of the different types of sprinklers.
 11. Explain the operation and appropriate application for the different types of portable fire extinguishing systems.
 12. Identify and analyze the causes involved in the line of duty firefighter deaths related to structural and wildland firefighting, training and research and the reduction of emergency risks and accidents.

Available Texts:

Fire Protection Handbook, NFPA
Operation of Fire Protection Systems; NFPA 1981

**Supporting
References/Research
for Faculty and
Students:****U.S. Fire Administration**

Publications: <http://www.usfa.fema.gov/applications/publications>

See Fire Protection, Fire Service Operations

Applied Research:

<http://www.usfa.fema.gov>

Research Reports:

<http://www.usfa.fema.gov/research>

Technical Reports:

<http://www.usfa.fema.gov/applications/publications/browse.cfm?mc=29>

Topical Fire Research Series:

<http://www.usfa.fema.gov>

Learning Resource Center:

<http://www.lrc.fema.gov>

National Institute for Standards and Technology

<http://www.fire.nist.gov>: Fire Tests/Data, Software/Models,
Publications, FIREDOC (under Publications)

References

Automatic Sprinkler and Standpipe Systems; John L. Bryan, NFPA
1990

Design of Special Hazard and Fire Alarm System; Robert Gagnon,
Thomson 1997

Design of Special Hazard and Fire Alarm System; Robert Gagnon,
Delmar 1998

Design of Water Based Fire Protection Systems; Robert Gagnon,
Thomson 1996

Design of Water Based Fire Protection Systems; Robert Gagnon,
Delmar 1997

Fire Suppression and Detection Systems; John Bryan, MacMillan
Publishing

Private Fire Protection and Detection; Fire Protection Publication 2001

Lessons Learned Information Sharing:

<http://www.llis.dhs.gov/member/secure/index.cfm>

<http://www.homefiresprinkler.org>

Society of Fire Protection Engineers:

<http://www.pentoncmg.com/sfpe/index.html>

Current Events/News

<http://www.firehouse.com>

<http://www.fireengineering.com>

<http://www.withthecommand.com>

Assessment:

Students will be evaluated for mastery of learning objectives by methods of evaluation to be determined by the instructor.

Points of Contact:

Judith Kuleta, Bellevue Community College, Washington
(425) 564-2515, jkuleta@bcc.ctc.edu

Course Outline

Fire Protection Systems

- I. Introduction to Fire Protection Systems
 - A. The role fire protection systems play in protecting the life, safety and welfare of the general public and firefighters
 - B. Overview of the different types of fire protection systems
 - C. The role of codes & standards in fire protection system design
- II. Water Supply Systems for Fire Protection Systems
 - A. Sources of fire protection water supply
 - B. Distribution networks
 - C. Piping
 - D. Hydrants
 - E. Utility company interface with the fire department
- III. Water-based fire suppression systems
 - A. Properties of water
 - 1. Water as an effective extinguishing agent
 - 2. How water extinguishes fire
 - B. Sprinkler Systems
 - 1. Types of systems & applications
 - 2. Types of sprinklers & applications
 - 3. Piping, valves, hangers & alarm devices
 - 4. Fire department operations in buildings with sprinkler systems
 - C. Residential sprinkler systems
 - D. Standpipe systems
 - 1. Types & applications
 - 2. Fire department operations in buildings with standpipes
 - E. Foam systems
 - F. Water mist systems
 - G. Fire pumps
 - 1. Types
 - 2. Components
 - 3. Operation
 - 4. Fire pump curves
- IV. Non-water-based fire suppression systems
 - A. Carbon dioxide systems
 - 1. Applications
 - 2. Extinguishing properties

- 3. System components
 - B. Halogenated systems
 - 1. Halon 1301 and the environment
 - 2. Halon alternatives
 - 3. Extinguishing properties
 - 4. System components
 - C. Dry/Wet Chemical Extinguishing systems
 - 1. Extinguishing properties
 - 2. Applications
 - 3. UL 300
- V. Fire alarm systems
 - A. Components
 - B. Types of fire alarm systems
 - C. Detectors
 - 1. Smoke
 - 2. Heat
 - 3. Flame
 - D. Audible/visual devices
 - E. Alarm monitoring
 - F. Testing & maintenance of fire alarm systems
- VI. Smoke management systems
 - A. Hazards of smoke
 - B. Smoke movement in buildings
 - C. Types of smoke management systems
 - D. Firefighter operations in buildings with smoke management systems
- VII. Portable fire extinguishers
 - A. Types & applications
 - B. Selection
 - C. Placement
 - D. Maintenance
 - E. Portable fire extinguisher operations

Principles of Emergency Services

Course Description: This course provides an overview to fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection/service; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; introduction to fire strategy and tactics.

Prerequisite: None.

- Outcomes:**
1. Describe and discuss the components of the history and philosophy of the modern day fire service.
 2. Analyze the basic components of fire as a chemical reaction, the major phases of fire, and examine the main factors that influence fire spread and fire behavior.
 3. Differentiate between fire service training and education; fire protection certificate program and a fire service degree program; and explain the value of education in the fire service.
 4. List and describe the major organizations that provide emergency response service and illustrate how they interrelate.
 5. Identify fire protection and emergency-service careers in both the public and in the private sector.
 6. Synthesize the role of national, state and local support organizations in fire protection and emergency services.
 7. Discuss and describe the scope, purpose, and organizational structure of fire and emergency services.
 8. Describe the common types of fire and emergency services facilities, equipment, and apparatus.
 9. Compare and contrast effective management concepts for various emergency situations.
 10. Identify and explain the components of fire prevention including code enforcement, public information, and public and private fire protection systems.

Available Texts:

Introduction to Fire Protection, Robert Klinoff, Thomson, 2002
Fire Protection Handbook, NFPA (CDROM available)
Firefighters Handbook, Thomson 2004

**Supporting
References/Research
for Faculty and
Students:****U.S. Fire Administration**Publications:

http://www.usfa.fema.gov/applications/publications/pubs_main.cfm

See All Categories

Applied Research:

<http://www.usfa.fema.gov/dhtml/inside-usfa/research.cfm>

Research Reports:

http://www.usfa.fema.gov/dhtml/inside-usfa/r_reports.cfm

Technical Reports:

<http://www.usfa.fema.gov/applications/publications/techreps.cfm>

Topical Fire Research Series:

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Learning Resource Center:

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National Institute for Standards and Technology

<http://www.fire.nist.gov>: Fire Tests/Data, Software/Models,
Publications, FIREDOC (under Publications)

References

Fire Service Orientation and Terminology, Fire Protection
Publications, 2004

NIMS - This should be included in all or several management
courses

Organizing for Fire and Rescue Services; Arthur Cote, NFPA, 2003

Smoke Your Interview, Paul Lepore, Freeschool Publications, 2003

*Strategic and Tactical Considerations on the Fire Ground (and
Instructor's Guide)*; James Smith, Brady-Prentice Hall

*Strategic and Tactical Considerations on the Fire Ground Study
Guide*; James Smith, Trafford Press

Current Events/News

<http://www.firehouse.com/>

<http://www.fireengineering.com/>

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Assessment:

Students will be evaluated for mastery of learning objectives by
methods of evaluation to be determined by the instructor.

Points of Contact:

Terry Koeper, Crafton Hills College, California, (909) 389-3261,
tkoeper@craftonhills.edu

Course Outline

Principles of Emergency Services

- I. Careers in the Fire Protection/Emergency Services
 - A. Opportunities/Private, Industrial, Local, Municipal, State and Federal
 - B. Pay, Hours of Duty, Benefits, Promotion and Retirement Qualifications
 - C. Work Ethics and Human Relations Education and Training
 - 1. Certificates
 - 2. Degrees
 - D. Selection Process
- II. History
 - A. Evolution of the Fire Protection
 - B. The U.S. Fire Problem: Life and Property
- III. Fire Prevention and Public Fire Education
 - A. Fire Investigation
 - B. Code Enforcement
 - C. Public Education
- IV. Scientific Terminology
 - A. Fire Behavior
 - B. Flammability and Characteristics of Solids, Liquids and Gases.
- V. Building Design and Construction
- VI. Fire Detection and Suppression Systems
- VII. The Role of Public and Private Support Organizations
 - A. Local
 - B. State
 - C. Federal and National
 - D. International
- VIII. Fire and Emergency Services Equipment and Facilities
- IX. Management
 - A. Emergency Operations
 - B. Organizational Structure of Fire and Emergency Services